NITROGEN

PHOSPHATE

POTASH

THE FERTILIZER SUPPLY 1974-75

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List of Tables

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THE FERTILIZER SUPPLY 1974-75 1/

SUMMARY

Net domestic supplies of fertilizer materials in 1974-75 are expected to total 23.2 million tons of plant nutrients - nitrogen (N), phosphate (P_2O_5), and potash (K_2O). This is 10 percent more than last year's supply and also 22 percent more than 2 years ago.

Estimated supplies of N total 10,750,000 tons, up 8 percent from last year and 22 percent from 2 years ago; P_2O_5, 6,053,000 tons, up 13 percent from a year ago and 15 percent from 2 years ago; and K_2O, 6,441,000 tons, up 11 percent from a year ago and 30 percent from 2 years ago.

Existing anhydrous ammonia plants are expected to continue operating at near capacity. Natural gas curtailments are estimated to have reduced total ammonia production between 400,000 and 500,000 tons. Action by the Federal Power Commission in restoring gas supplies to these plants is responsible for keeping losses down to these levels. Production of other nitrogenous materials is expected to continue at levels above last year. Indications are that industrial ammonia is being diverted to fertilizer as a result of some slackening in industrial uses.

Wet-process phosphoric acid supply is expected to be about 16 percent larger than last year. While some phosphate plants had fuel supply problems, these were resolved with minimum loss in production. Ammonium phosphate production is estimated to be down about 2 percent, with concentrated superphosphate up 1 percent, and all other phosphates, primarily merchant phosphoric acid, up about 54 percent.

About 74 percent of the net domestic supply of potassium chloride is expected to be imported, primarily from Canada. The supply from domestic production is expected to be down about 1 percent. Potassium sulfate supplies are expected to be up 15 percent from year-ago levels.

Nitrogen and phosphates are likely to continue in a tight supply position. The supply situation tends to be distorted by uncertainty of available supply, and competition to obtain those supplies that are available.

Total imports of N, P_2O_5, and K_2O are expected to be up 10 percent over last year. N and K_2O imports are estimated to be up 14 and 11 percent, respectively, P_2O_5 imports down 15 percent from a year ago.

Exports of N, P_2O_5, and K_2O are expected to be 9 percent lower than last year, with N and K_2O down 21 and 16 percent, respectively, and P_2O_5 up 4 percent from a year ago.

1/ The fertilizer year is from July 1 through June 30.

NITROGEN (N)

Net domestic supplies of nitrogen (N) for fertilizer use in 1974-75 are expected to total 10,750,000 tons, about 8 percent more than was available last year and 22 percent more than 2 years ago (table 1). Supplies from domestic production are estimated to be up about 4 percent over last year, with imports up about 14 percent and exports down about 21 percent.

Supply from domestic production - Supplies of nitrogen (N) from domestic production are expected to total 10,503,000 tons (table 1). Anhydrous ammonia shipped as such for fertilizer use is expected to be up about 2 percent over last year. Production of all other liquid nitrogen indicates an increase of about 6 percent. Liquid nitrogen is estimated to be about 65 percent of the total domestic supply of N.

Solid ammonium nitrate supplies are expected to be up 4 percent from last year, ammonium sulfate down 5 percent, and solid urea for fertilizer use up about 37 percent. Other solid nitrogen bearing materials are estimated to be down about 10 percent from last year.

Imports - Total nitrogen imports are estimated to be about 1,225,000 tons of N, 14 percent more than in 1973-74, which will make the U.S. a net importer for the first time in 9 years. Imports of sodium nitrate are expected to more than double. Ammonium nitrate-limestone should be near 65,000 tons of N, with ammonium nitrate up about 48 percent. Anhydrous ammonia imports are estimated to be up about 7 percent over last year, with urea imports up about 36 percent.

Exports - Nitrogen exports will total around 978,000 tons of N, about 21 percent less than last year. Ammonium nitrate and anhydrous ammonia exports are expected to be down 67 and 41 percent, respectively, with other major N categories down between 5 and 11 percent.

Nitrogen capacities - Domestic anhydrous ammonia capacity was estimated at 17.5 million tons of anhydrous ammonia (NH_3) on January 1, 1975, up from 16.8 in 1974. Some plants have made technological improvements or modifications which enable them to produce above rated capacity. Plants under construction, or announced intentions to construct plants, are expected to add 1.7 million tons by January 1, 1976, and a total of about 8 million tons of capacity by January 1, 1979. Practically all of the large new plants will be using intrastate or Outer Continental Shelf natural gas.

Urea capacity is estimated to be 4.9 million tons of material. About 975,000 tons of additional capacity is scheduled to start production during 1975, with 200,000 tons more during 1976. Ammonium nitrate capacity for production of fertilizer is estimated to be 7 million tons of material, about 58 percent solid and 42 percent liquid. In addition, about 1.2 million tons of capacity is available for industrial use. Expansion of ammonium nitrate fertilizer capacity is expected to total 700,000 tons of material by the end of calendar year 1976.

Table 1.--Nitrogen: Estimated supply of N for fertilizer purposes, United States, fertilizer years, 1972-73, 1973-74, and 1974-75

Item	1972-73 1/	1973-74 1/	1974-75	Percent change in 1974-75 from 1973-74	Percent change in 1974-75 from 1972-73
	1,000 Short tons	1,000 Short tons	1,000 Short tons	Percent	Percent
Supply from domestic production:					
Liquids:					
Ammonia (including aqua)	3,844	4,370	4,476	+ 2	+ 16
All other	1,966	2,218	2,348	+ 6	+ 19
Total liquids	5,810	6,588	6,824	+ 4	+ 17
Solids:					
Ammonium nitrate 2/ 3/	1,360	1,317	1,366	+ 4	0
Ammonium sulfate 3/	500	562	535	- 5	+ 7
Urea	566	586	804	+ 37	+ 42
All other solids 4/	1,211	1,088	974	- 10	- 20
Total solids	3,637	3,553	3,679	+ 4	+ 1
Total liquids and solids	9,447	10,141	10,503	+ 4	+ 11
Imports:					
Ammonia (including aqua)	282	359	385	+ 7	+ 37
Nitrogen solutions	43	50	50	0	+ 16
Ammonium nitrate	110	101	149	+ 48	+ 35
Ammonium sulfate	58	57	59	+ 4	+ 2
Urea 3/	241	240	326	+ 36	+ 35
Sodium nitrate	12	16	37	+131	+208
All other	136	249	219	- 12	+ 61
Total	882	1,072	1,225	+ 14	+ 39
Exports:					
Ammonia (including aqua)	721	502	295	- 41	- 59
Ammonium nitrate	7	12	4	- 67	- 43
Ammonium sulfate	102	117	104	- 11	+ 2
Urea	241	148	131	- 11	- 46
All other	437	465	444	- 5	+ 2
Total	1,508	1,244	978	- 21	- 35
Net domestic supply	8,821	9,969	10,750	+ 8	+ 22

1/ Revised.
2/ Includes ammonium nitrate and ammonium nitrate-limestone mixtures.
3/ Adjusted for estimated quantity going into non-fertilizer uses.
4/ To avoid duplication, the figure for "all other solids" has been adjusted by the estimated amount of imported ammonia used in primary materials.

PHOSPHATE (P_2O_5)

Net domestic supplies of phosphate (P_2O_5) in 1974-75 are expected to total 6,053,000 tons, about 13 percent more than was available last year and 15 percent more than 2 years ago (table 2). Imports are estimated to be 269,000 tons of P_2O_5, down 15 percent from 1973-74 and down 14 percent from 1972-73. Exports are expected to be 1,614,000 tons of P_2O_5, up 4 percent from a year ago and up 14 percent over 1972-73.

Normal superphosphate - Total supplies of normal and enriched superphosphate from domestic production are estimated to be 698,000 tons of P_2O_5, about 4 percent more than last year (table 2). Imports will be negligible. Exports are expected to total about 12,000 tons of P_2O_5, compared with 10,000 tons last year.

Concentrated superphosphate - Supplies of concentrated superphosphate from domestic production are expected to total 1,725,000 tons of P_2O_5, 1 percent more than last year. Imports are likely to be about the same as last year. Exports are expected to be up about 16 percent.

Ammonium phosphate - Domestic supplies of ammonium phosphate are expected to total 2,604,000 tons, 2 percent less than in 1973-74, and 4 percent less than 2 years ago. Imports are estimated to be down about 43 percent from last year, and exports down about 5 percent.

Phosphoric acid - Production of phosphoric acid, the basic P_2O_5 material for the manufacture of high-analysis phosphatic fertilizers, is expected to be up 16 percent over last year. Trends in production of concentrated superphosphate and ammonium phosphate have not shown a corresponding increase. Thus, supplies of phosphoric acid available for sale to secondary fertilizer producers are expected to be 50 percent more than last year. Secondary manufacturers of fertilizer purchase phosphoric acid to produce solid mixtures, solid N-P base materials (including ammonium phosphate), liquid N-P base materials (including ammonium phosphate and ammonium polyphosphate), liquid mixed fertilizers, and for direct application. Indications are that commercial shipments of phosphoric acid to secondary manufacturers continue to grow. Further indication of this trend is the fact that the entire production of one of the largest phosphoric acid plants is merchant acid.

Imports are expected to be up 28 percent, with exports to be up about 70 percent.

World market for P_2O_5 - Strong demand and attractive prices for P_2O_5 on the world market have continued the pressure on domestic producers to take advantage of the more attractive export prices. However, signs of a slackening demand and softening of prices have appeared in recent months. The world economic situation, and lack of available foreign exchange to purchase fertilizer are the major factors.

Table 2.--Phosphate: Estimated supply of P_2O_5 for fertilizer purposes, United States, fertilizer years, 1972-73, 1973-74, and 1974-75

Item	1972-73 1/	1973-74 1/	1974-75	Percent change in 1974-75 from	
				1973-74	1972-73
	1,000 Short tons	1,000 Short tons	1,000 Short tons	Percent	Percent
Supply from domestic production:					
Normal and enriched superphosphate	620	673	698	+ 4	+ 13
Concentrated superphosphate	1,666	1,714	1,725	+ 1	+ 4
Ammonium phosphate 2/	2,704	2,664	2,604	- 2	- 4
All other 3/	1,397	1,539	2,371	+ 54	+ 70
Total	6,387	6,590	7,398	+ 12	+ 16
Imports:					
Concentrated superphosphate	27	32	31	- 3	+ 15
Ammonium phosphate	187	171	97	- 43	- 48
All other	98	112	141	+ 26	+ 44
Total	312	315	269	- 15	- 14
Exports:					
Normal superphosphate	9	10	12	+ 20	+ 33
Concentrated superphosphate	398	434	503	+ 16	+ 26
Ammonium phosphate	921	963	915	- 5	- 1
All other	94	139	184	+ 32	+ 96
Total	1,422	1,546	1,614	+ 4	+ 14
Net domestic supply	5,277	5,359	6,053	+ 13	+ 15

1/ Revised.
2/ Liquid and solid ammonium phosphate, excluding those combined with potash salts in the process of manufacture.
3/ Includes nitric phosphates, sodium phosphate, wet base goods, natural organics, phosphate rock, colloidal phosphate, basic slag, estimates of wet-process and furnace phosphoric acid for liquid and solid mixed fertilizers, and direct application, and ammonium phosphates combined with potash salts in the process of manufacture.

Phosphate capacities - Normal superphosphate capacity in operating plants is estimated to be about 825,000 tons of P_2O_5, 8 percent less than last year. Concentrated superphosphate capacity is estimated to be 2.2 million tons of P_2O_5. Expansion of concentrated superphosphate capacity is expected to increase 463,000 tons by the end of calendar year 1975.

Ammonium phosphate capacity in plants operated by primary producers is estimated to be about 4 million tons of P_2O_5, up from 3.7 million tons last year. Expansion and new construction are expected to add another 880,000 tons by the end of 1975. There are other plants operated by secondary producers which manufacture ammonium phosphate primarily for their own use in mixed fertilizers, liquid ammonium phosphate, and liquid ammonium polyphosphate for use in liquid mixed fertilizer, and for direct application. Sufficient information is not available to reliably estimate capacity for these.

Wet-process phosphoric acid capacity in operating plants is estimated to be 6.9 million tons of P_2O_5 compared with 6.6 million tons a year ago. Expansions and new plant capacity are expected to increase nearly 2 million tons by the end of calendar year 1976.

The above estimates of P_2O_5 capacities are based on current production of phosphatic materials. However, these capacities may shift within limits from one material to another, since phosphoric acid is the basic P_2O_5 source for the production of all concentrated phosphatic materials except nitric phosphate.

Within limits, market conditions govern the division of the output into concentrated superphosphate, various grades of ammonium phosphate, liquid base N-P materials, or sales of phosphoric acid to secondary fertilizer manufacturers.

POTASH (K_2O)

Net domestic supplies of potash (K_2O) in 1974-75 are expected to total 6,441,000 tons, 11 percent more than last year and 30 percent more than 2 years ago (table 3). Imports are expected to be 4,596,000 tons of K_2O, up 11 percent over 1973-74. Exports are expected to be 795,000 tons of K_2O, down 16 percent.

Potassium chloride - Supplies of domestically produced potassium chloride (muriate of potash) are expected to total 2,158,000 tons of K_2O (table 3), about 1 percent less than last year and 7 percent less than 2 years ago. Imports are expected to be up about 12 percent. Exports are estimated to be down 23 percent. Subtracting exports from domestic production means that only 26 percent of the net domestic supply will be from domestic production. Practically all of the remaining 74 percent will be imported from Canada.

Table 3.--Potash: Estimated supply of K_2O for fertilizer purposes, United States, fertilizer years, 1972-73, 1973-74, and 1974-75

Item	1972-73 1/	1973-74 1/	1974-75	Percent change in 1974-75 from	
				1973-74	1972-73
	1,000 Short tons	1,000 Short tons	1,000 Short tons	Percent	Percent
Supply from domestic production:					
Potassium chloride	2,322	2,181	2,158	- 1	- 7
Potassium sulfate 2/	333	388	447	+ 15	+ 34
All other	35	35	35	0	0
Total	2,690	2,604	2,640	+ 1	- 2
Imports:					
Potassium chloride	3,126	4,029	4,512	+ 12	+ 44
Potassium sulfate 2/	27	37	29	- 22	+ 7
All other	39	60	55	- 8	+ 41
Total	3,192	4,126	4,596	+ 11	+ 44
Exports:					
Potassium chloride	761	771	594	- 23	- 22
Potassium sulfate 2/	120	136	157	+ 15	+ 31
All other	41	40	44	+ 10	+ 7
Total	922	947	795	- 16	- 14
Net domestic supply	4,960	5,783	6,441	+ 11	+ 30

1/ Revised.
2/ Includes potassium-magnesium sulfate.

Potassium sulfate - Supplies of potassium sulfate and potassium nagnesium sulfate from domestic production are expected to total 447,000 tons of K_2O, about 15 percent more than last year and 34 percent more than 2 years ago. Imports are expected to be down about 22 percent and exports up about 15 percent.

Potash capacities - U.S. potash production capacity is estimated to be 3.4 million tons of K_2O as of January 1, 1975, according to the latest estimates from the Bureau of Mines.

Canadian capacity is estimated to be about 8.3 million tons of K_2O.

INVENTORIES

Inventories of nitrogen and phosphate materials are reported monthly by the Bureau of the Census. Inventories of each nitrogenous material are stocks held by producing companies at plants and other locations. Phosphate material inventories are the stocks at producing locations only. Monthly potash inventories are not available from Government sources. Data are not available on inventories held by secondary manufacturers, distributors, and dealers.

Nitrogen - The inventory of anhydrous ammonia at the end of June 1974 was 615,376 tons, about the same as the previous June, but 38 percent less than 2 years ago (table 4). The inventory at the end of December 1974, the middle of the current fertilizer year, was up about 29 percent from the very low inventory at the end of December 1973, but down 30 percent from 2 years ago. Stocks of other nitrogenous materials at the end of June 1974 were still at low levels, compared to 2 years ago, except ammonium sulfate. Thus, virtually all of the supplies available for distribution during the 1974-75 fertilizer year were those provided from current production during the period.

Phosphate - The wet-process phosphoric acid June 1974 inventory, which had previously remained fairly steady, was 50 percent higher than a year earlier. The December 1974 inventory was up over 75 percent from the previous year (table 4).

June 1974 stocks of total phosphates were at their lowest level since 1959. However, December 1974 inventories were up 27 percent over the previous December.

FOREIGN TRADE IN FERTILIZER

U.S. imports - Seventy-eight percent of the total fertilizer imports came from Canada in 1973-74 (table 5). Over four-fifths of this was potassium chloride. U.S. companies, or their subsidiaries in Canada,

Table 4.--Inventories of selected fertilizer materials, United States, end of June, December, and February 1/

Material	Unit	Beginning inventory for following fertilizer year			Mid-fertilizer year inventory			Inventory build-up for spring season	
		June			December			February	
		1972	1973	1974	1972	1973	1974	1973	1974
Anhydrous ammonia	Tons of material	990,319	622,318	615,376	1,593,753	857,284	1,109 528	1,689,034	1,116,823
Ammonium nitrate, solid	"	158,696	27,824	48,801	321,018	159,749	250,134	271,707	149,087
Ammonium sulfate	"	81,872	62,508	139,496	178,087	113,602	118,651	216,980	200,754
Ammonium sulfate coke oven	"	22,000	39,000	14,000	83,000	32,000	24,000	91,000	26,000
Nitrogen solutions	Tons of N	219,107	97,330	79,836	328,899	309,483	321,580	403,058	244,250
Phosphoric acid wet-process	Tons of P_2O_5	87,231	79,435	118,195	110,518	87,121	153,331	83,018	112,561
Total phosphates	"	323,727	297,553	260,493	432,868	325,360	412,882	437,426	298,291
Normal & enriched superphosphates	"	67,916	52,625	53,927	71,518	66,846	77,876	74,782	66,410
Concentrated superphosphates	"	97,582	103,960	95,016	113,194	108,290	177,627	117,014	111,278
Ammonium phosphates	"	133,190	135,048	95,773	196,584	136,784	139,326	212,522	106,243
Other phosphates	"	25,039	5,920	15,777	51,572	20,323	18,053	33,108	14,360

1/ Current Industrial Reports, Inorganic Fertilizer Materials and Related Acids, M28B, Bureau of the Census.

Table 5.--U.S. imports of selected fertilizer materials by country of origin, fertilizer year 1973-74 1/

Country of origin	Ammonium sulfate	Ammonium nitrate	Anhydrous ammonia	Urea	Calcium nitrate	Phosphate crude	Potassium chloride	Potassium sulfate	Potassium-sodium nitrate	Mixed fertilizers
	Short tons of material									
Canada	200,842	249,102	83,371	172,044	42	2,450	6,641,808	197	1,137	179,362
Mexico		79	1,565	3,637		40,846				354
Trinidad	25,900		127,775	54,603						
Netherland Antilles			67,754			62,857				
Chile									25,403	
Norway				83,424	139,184				12,366	22,110
United Kingdom		275		5,806						10
Netherlands	41,319	19,531	40,600	276,076	31,326		100			
Belgium				19,987				7,682		240
France		10,819	6,092	44				19,031		113
West Germany	5,000	18,836	298	5,584			10,016	47,001		21,063
Spain						12,727				
Morocco						13,699				
Israel				548			73,409		8,498	
Iran			16,250							13
Venezuela			59,064							
Japan				5,865						2
Australia			26,649							
Italy		2,205		24,042	13,475					8,818
Kuwait			7,965							
Dominican Republic				4,958						
Poland				1,262						
Portugal				3,424						
Romania				6,099						
South Africa, NEC						31,377				
U.S.S.R.							41,249			
Total, other		322	256	913	547					20
Total	273,061	301,169	437,639	668,316	184,574	163,956	6,766,582	73,911	47,404	232,105

1/ Other materials imported were the following: 719 tons dried blood; 117 tons manures, including guano; 3,299 tons calcium cyanamide; 99,863 tons sodium nitrate; 10,913 tons bone ash, dust, meal; 21,545 tons potassium nitrate; 208,776 tons ammonium nitrate-limestone; 166,304 tons nitrogen solutions; 212,821 tons nitrogenous fertilizer NSPF; 106,432 tons liquid phosphatic fertilizer; 74,927 tons solid phosphatic fertilizer NSPF; 6,432 tons potassic fertilizer NSPF; 396,757 tons ammonium phosphates; and 78,968 tons fertilizer materials NSPF.

and subsidiaries of Canadian companies in the United States are responsible for a large share of the imports. Ammonium nitrate-limestone, anhydrous ammonia, calcium nitrate, potassium nitrate, potassium-sodium nitrate, potassium sulfate, and sodiam nitrate are imported fertilizers for which Canada is not the major source. Mexico continues to be the major import source of phosphoric acid.

Ammonium nitrate-limestone, anhydrous ammonia, calcium nitrate, nitrogen solutions, sodium nitrate, synthetic nitrogenous material, phosphate crude, phosphoric acid, potassium chloride, potassium-sodium nitrate, potassium sulfate, and mixed fertilizer showed gains in 1973-74 over the previous year (table 6). Ammonium nitrate-limestone imports were the largest since 1956. Imports of potassium chloride more than doubled during the last 6 years (1968-69 through 1973-74).

U.S. exports - Phosphate rock exports exceeded 14 million tons in 1973-74 (table 7). Canada and Japan together took nearly 6 million tons. Belgium, West Germany, and Mexico each took just over 1 million tons.

Potassium chloride exports were over 1 million tons and ammonium phosphate over 2 million tons. Concentrated superphosphate exports have reached nearly 1 million tons. Over a half million tons each of anhydrous ammonia and ammonium sulfate were exported.

Anhydrous ammonia, sodium nitrate, urea, and miscellaneous nitrogenous materials not identified (by the Bureau of the Census) were the only materials exported which did not show gains in 1973-74 over the previous year (table 8). Exports of ammonium phosphate have increased over 50 percent during the last 5 years.

About 29 percent of all plant nutrients exported in 1973-74 (excluding phosphate rock) went to countries with Agency for International Development (AID) agricultural programs compared with 50 percent in 1972-73. Over half of the exported ammonium nitrate, urea, and mixed fertilizer went to developing countries in which AID had active agricultural programs (table 7). AID financed fertilizer exports to only six of these countries. However, AID did not necessarily finance all the fertilizer exported to these countries. India, Brazil, and South Korea, which have been AID participants for years, did not have an active AID program in 1973-74.

U.S. historical trade balance - The United States shifted from a net importer of nitrogen (N) to a net exporter in 1966 (table 9). The shift resulted primarily from the increased emphasis on the use of fertilizers in the AID program. A reduction in the AID requirements in 1969-70 caused the first decline in N exports since 1962-63. The decline was reversed in 1972-73 by the worldwide food shortage and the need to increase food production. However, it is expected that the U.S. will shift back to a net importer of N in 1974-75 due primarily to limited availability of foreign exchange for fertilizer purchases and world economic conditions.

Table 6 .--U.S. imports of selected fertilizer materials, fertilizer years 1969-70 through 1973-74

Material	1969-70	1970-71	1971-72	1972-73	1973-74
	Short tons of material				
Ammonium nitrate	306,010	365,943	390,324	329,243	301,169
Ammonium nitrate-limestone	1,265	62	134	181	208,776
Ammonium sulfate	179,350	218,752	263,559	276,183	273,061
Anhydrous ammonia	477,189	501,451	392,975	343,087	437,639
Calcium cyanamide	10,862	8,357	3,356	3,761	3,299
Calcium nitrate	48,747	48,293	39,314	97,702	184,574
Nitrogen solutions	97,651	194,494	119,540	144,762	166,304
Sodium nitrate	164,130	188,207	159,500	74,558	99,863
Synthetic nitrogenous material,nec	13,112	12,661	35,438	20,743	212,821
Urea	423,577	329,640	365,218	671,714	668,316
Ammonium phosphate	395,476	471,779	488,865	433,737	396,757
Phosphate, crude	153,626	123,194	67,058	43,112	163,956
Phosphoric acid	19,966	37,215	90,662	89,490	106,432
Potassium chloride	4,377,755	4,115,291	5,082,283	5,250,338	6,766,582
Potassium-sodium nitrate	39,094	74,913	39,586	37,783	47,404
Potassium sulfate	69,717	62,732	48,042	54,456	73,911
Mixed fertilizers	168,668	198,307	188,473	198,311	232,105

Table 7.--U.S. exports of selected fertilizer materials by country of destination, fertilizer year 1973-74 1/

Country of destination	Ammonia sulfate	Ammonium nitrate	Anhydrous ammonia	Urea	Phosphate rock (all)	Normal super-phosphate	Concentrated super-phosphate	Ammonium phosphate	Potassium chloride	Mixed fertilizers
	Short tons of material									
Canada	47,370	1,990	20,865	1,179	3,578,979	11,010	18,161	44,920	2,854	66,631
Mexico	105,927	4,012	161,717	96	1,067,051			4,491	72,642	2,014
El Salvador 2/	27,706	141		8,587	21,490			39,283	3,194	8,281
Nicaragua 2/ 3/	345	70		551	28		216	20,374	5,742	3,785
Costa Rica 2/	5,833		17,494	1,166	10,088	155	6,065	33,337	36,992	1,450
Jamaica 2/	6,929	227					2,885	1,348	10,398	37
Dominican Republic 2/	67,213	62	88	26,578	355	96	10,856	32,461	29,390	805
Trinidad - Tobago			43,928				1,044	112	372	110
Netherlands Antilles	19,250	100	75					12		125
North America, other 4/	676	776	97	4,327	293	55	397	11,582	818	12,531
Colombia 2/	2,853		32,111	10,695	124,401		32,695	22,116	81,882	24,534
Venezuela	24,198			70	934		2,937	15,059	10,805	24
Ecuador 2/		378			13,196		7,596	18,559	2,792	3,442
Chile					83,712		81,152	52,331	21	22
Brazil	204,844		22,321	21,489	662,905		364,288	522,554	343,462	2,996
Uruguay 2/		1,984						15,636	2,975	91
Argentina	28	230		1,750			7,164	21,842	2,604	9
South America, other 4/		921		200	5,606	331	2,649	7,301		275
Sweden					77,375				994	50,734
Norway					73,383					
Finland			33,575						22,095	
Denmark			42,969							
United Kingdom	20		35,929	5	121,732		63	20	39,842	11,170
Netherlands	13				724,955		112			246
Belgium				21,406	1,172,697			17,655		49,757
France			60,073		386,375		91,225	141,679		88
West Germany	124				1,017,251					3,494
Austria					158,939					100
Poland					226,096					
Spain	202	32	40,803		74,201					52
Italy					573,420		18,952	52,556		26,670
Yugoslavia								49,418		
Romania					94,823					
Turkey 2/			14,281							
Europe, other 4/			5,299						9,638	1,027
Lebanon								67,228		
Iran					378,214				26	31
India				14,835	257,375			379,582	22	
Afghanistan 2/ 3/				13,470				11,773		
Pakistan 2/ 3/				39,386				107,056		1
Bangladesh 2/ 3/							23,835		11,655	
Thailand 2/				2,294				84,975		7,373
South Vietnam 2/ 3/	11,167	24,291	110	83,248				26,763	8,992	145,897
Singapore		8			2,554	28	45,093	49,891	1,488	64
Indonesia 2/ 3/	37	86		40,844			44,227	14,397		7
Philippines 2/		109		10,480	146,706	3,548		14,830	45,925	5,822
Korea, Republic of	141				558,043		133,638	2,949		594
China, Peoples Republic of					58,322	26,738		48,461		35
China, Taiwan	30,979	695	67	6,815	70,059			110,576	55,577	
Japan	443	13		11,264	2,276,262	3,316	10,559		152,147	384
Asia, other 4/		51	265	19			5,624	239	30	1,329
Australia		150		836	143				125,557	447
New Zealand	314	598				6,575		49,075	182,832	2,906
Oceania, other		40		20				32	65	92
Algeria							22,475	35,006		
Ethiopia 2/								26,648		
Egypt (UAR)							9,259		28	
Africa, other 4/	862			914					137	1,765
Total	557,474	36,964	532,067	322,524	14,017,963	51,852	943,167	2,154,127	1,263,993	437,247
Countries with AID programs 2/	120,459	27,382	64,368	201,698	404,511	3,854	165,834	526,129	250,397	212,566
Percent to AID countries	22	74	12	63	3	7	18	24	20	49
Countries where AID financed at least part of fertilizers 3/	11,549	24,447	110	192,334	2,582	-	68,278	180,363	26,389	149,690

1/ Other exports: 566 tons sodium nitrate; 1,809 tons natural crude potash salts; 29,177 tons nitrogenous chemical fertilizer, nec; 2,355 tons basic slag; 272,345 potassium chemical fertilizers,nec; 117,442 tons phosphoric acid; and 55,057 tons organic material.
2/ Countries with active AID agricultural programs.
3/ Countries which received AID financed fertilizer, but not necessarily all that was exported to each country.
4/ Includes AID and non-AID countries.

Table 8.--U.S. exports of selected fertilizer materials, fertilizer years 1969-70 through 1973-74

Material	1969-70	1970-71	1971-72	1972-73	1973-74
	Short tons of material				
Anhydrous ammonia	764,649	598,426	420,865	693,857	532,067
Ammonium nitrate	81,211	58,621	33,742	21,425	36,964
Ammonium sulfate	528,444	600,833	557,562	485,950	557,474
Sodium nitrate	585	2,063	982	1,233	566
Urea	670,841	374,152	464,462	522,976	322,524
Synthetic nitrogenous materials n. e. c.	32,482	47,528	98,124	30,381	29,177
Phosphate rock	10,972,968	12,757,600	13,580,470	13,587,848	14,017,963
Normal superphosphate	36,359	17,637	13,637	46,712	51,852
Concentrated superphosphate	710,461	627,064	723,901	865,318	943,167
Ammonium phosphate	986,051	1,135,089	1,541,521	2,060,341	2,154,127
Potassium chloride	902,408	772,248	858,869	1,247,457	1,263,993
Potassium sulfate	186,138	238,047	211,366	240,306	272,345
Mixed fertilizers	403,981	317,338	243,022	372,692	437,247

Table 9.--U.S. imports and exports of primary plant nutrients, 1951-52 through 1974-75

Fertilizer Year	N		P_2O_5		K_2O	
	Imports	Exports	Imports	Exports	Imports	Exports
1951-52	290	73	39	94	264	63
1952-53	429	44	41	74	159	54
1953-54	421	62	62	88	121	54
1954-55	373	141	61	154	139	91
1955-56	330	255	56	153	170	180
1956-57	294	268	54	256	179	315
1957-58	305	227	59	246	213	252
1958-59	294	223	64	204	238	310
1959-60	298	188	82	177	282	418
1960-61	276	213	67	238	285	484
1961-62	337	234	87	283	282	503
1962-63	344	196	117	275	486	411
1963-64	453	264	100	400	691	526
1964-65	470	392	98	432	884	625
1965-66	529	546	125	441	1,332	664
1966-67	669	749	165	787	1,643	678
1967-68	675	1,045	169	1,145	2,225	714
1968-69	690	1,594	183	995	1,944	798
1969-70	855	1,328	273	845	2,646	681
1970-71	929	1,077	283	898	2,510	620
1971-72	843	1,032	326	1,102	3,088	657
1972-73	882	1,508	312	1,422	3,192	922
1973-74	1,072	1,244	315	1,546	4,126	947
1974-75*	1,225	978	269	1,614	4,596	795

* Estimated.

Import Balance

Export Balance

In phosphate, the United States has maintained an export balance of processed phosphatic fertilizers since 1941. It became more pronounced as AID requirements increased. Exports peaked in 1967-68. A decline, which started in 1968-69, was halted in 1970-71 largely as a result of firms in several countries purchasing concentrated superphosphate and ammonium phosphate to start developing markets for plants which were under construction. The world food situation further emphasized the need for P_2O_5, and a slight increase in exports is expected in 1974-75.

United States exports accounted for about 33 percent of processed fertilizer P_2O_5 in world trade in 1972-73. In addition, the United States has exported 11 to 14 million tons of phosphate rock in each of the past 5 years.

The United States had an export balance of K_2O from 1955-56 through 1961-62. Production from the newly developed Canadian deposits shifted the net balance to imports in 1962-63. Imports of Canadian potassium chloride (KCl) have been larger than deliveries of domestic KCl since 1969-70.

For the three primary fertilizer nutrients combined, the U.S. imported 5,513,000 tons and exported 3,737,000 tons in 1973-74. The U.S. is expected to import 6,089,000 tons and export 3,387,000 tons of these nutrients in 1974-75.

THE WORLD FERTILIZER MARKET

World food shortages have intensified the interest in fertilizer as a means of increasing crop yields and thereby increasing total food production. Fertilizer is an important tool for increasing needed food production in developing countries, as well as developed countries.

World production of primary plant nutrients totaled about 82 million metric tons 1/ in 1972-73 (latest year for which world fertilizer data are available), an increase of about 7 percent over the previous year (tables 10, 11, and 12). Consumption totaled over 77 million tons in 1972-73, a 7 percent increase over the previous year.

The United States ranked number one in total use of each of the primary plant nutrients and the production of N and P_2O_5 in 1972-73. It produced 21 percent of the world's plant nutrients and used 21 percent of them in 1972-73.

Nitrogen (N) - In 1972-73, the United States produced 22 percent of the world's supply of N for fertilizer, consumed 21 percent, and ranked number two as an importer and exporter (table 10). China ranked number one as an importer, however, its imports have declined the past 2 years.

1/ Multiply metric tons by 1.1023 to convert to short tons.

Table 10.--Nitrogen: N production, consumption, and foreign trade by leading countries, 1972-73

Country	Production		Imports		Exports		Consumption	
	Metric tons N	Rank	Metric tons N	Rank	Metric tons N	Rank	Metric tons N	Rank
United States	8,472,000	1	810,000	2	1,198,000	2	7,564,774	1
U. S. S. R.	6,551,000	2	13,400 1/	-	217,800	-	5,624,000	2
Japan	2,454,100	3	-------	-	1,679,600	1	732,900	9
China	2,245,000 1/	4	1,248,000 1/	1	34,000 1/	-	3,459,000 1/	3
France	1,471,869	5	222,700	9	193,072	-	1,661,786	5
West Germany	1,470,557	6	281,938	6	451,415	5	1,189,022	6
Netherlands	1,188,489	7	27,686	-	820,362	3	375,457	-
Poland	1,147,276	8	37,366	-	337,777	8	978,875	7
India	1,051,000	9	691,375	3	-------	-	1,778,000	4
Italy	1,045,519	10	86,060	-	264,877	-	691,806	10
Romania	874,000	-	-------	-	429,000 1/	6	421,000	-
United Kingdom	816,000 1/	-	153,300 1/	-	75,300 1/	-	946,800 1/	8
Canada	800,000	-	25,000	-	385,000	7	440,000	-
Belgium	646,094	-	101,163	-	514,210	4	166,743	-
Norway	395,700	-	-------	-	315,500	9	78,800	-
Mexico	356,313	-	202,081	10	48,390	-	519,320	-
Egypt	151,800	-	240,000 1/	8	-------	-	350,000 1/	-
Brazil	71,038	-	323,978	5	828	-	394,188	-
Kuwait	269,549	-	-------	-	276,378	10	-------	-
Indonesia	59,857	-	244,907	7	-------	-	347,404	-
Turkey	145,200 1/	-	344,000 1/	4	-------	-	375,000 1/	-
World Total	38,028,045		7,707,459		8,142,664		36,051,641	

1/ Unofficial figures.

Source: Annual Fertilizer Review 1973, Food and Agriculture Organization of The United Nations.

Table 11.--Phosphate: P_2O_5 production, consumption, and foreign trade by leading countries, 1972-73

Country	Production		Imports		Exports		Consumption	
	Metric tons	Rank	Metric tons	Rank	Metric tons	Rank	Metric tons	Rank
United States	6,554,552	1	282,000	3	1,291,000	1	4,601,224	1
U. S. S. R.	2,929,000	2	104,000	7	95,300	9	2,594,000	2
France	1,611,479	3	400,739	2	111,743	8	2,058,393	3
China	1,031,000 1/	4	18,200 1/	-	5,700	-	1,043,500	4
West Germany	985,975	5	116,041	6	173,334	6	902,595	5
Australia	900,000 1/	6	10,000 1/	-	100 1/	-	880,000 1/	6
Belgium	787,728	7	53,353	-	463,171	2	148,836	-
Poland	763,040	8	12,324	-	9,500	-	781,605	7
Japan	728,900	9	16,800	-	59,800	-	717,000	8
Canada	720,000	10	65,000	-	340,000	3	445,000	-
Italy	500,049	-	155,618	5	35,216	-	583,214	-
United Kingdom	467,000	-	74,900	10	60,900 1/	-	469,700	-
Netherlands	351,492	-	74,104	-	297,591	4	101,001	-
India	330,000	-	211,365	4	-------	-	584,000	10
Brazil	277,330	-	433,315	1	2,116	-	708,529	9
Tunisia	217,200 1/	-	-------	-	189,100 1/	5	17,800 1/	-
Morocco	154,234	-	-------	-	122,379	7	49,800 1/	-
Bulgaria	129,500	-	102,100 1/	8	-------	-	230,097	-
Hungary	180,816	-	82,800 1/	9	1,000 1/	-	266,177	-
Romania	312,619	-	-------	-	70,000 1/	10	172,900	-
World Total	23,687,667		3,575,632		3,934,594		22,595,435	

1/ Unofficial figures.

Source: Annual Fertilizer Review 1973, Food and Agriculture Organization of The United Nations.

Table 12.--Potash: K_2O production, consumption, and foreign trade by leading countries, 1972-73

Country	Production		Imports		Exports		Consumption	
	Metric tons	Rank	Metric tons	Rank	Metric tons	Rank	Metric tons	Rank
U. S. S. R.	5,433,000	1	-------	-	1,705,600	3	3,238,000	2
Canada	3,820,000	2	50,000	-	3,810,000	1	180,000 1/	-
West Germany	2,497,679	3	67,115	-	1,399,925	4	1,147,546	5
East Germany	2,458,000 1/	4	-------	-	1,820,000 1/	2	655,000 1/	6
United States	2,432,000	5	2,896,000	1	836,000	5	4,002,053	1
France	1,664,480	6	198,624	-	825,680	6	1,635,101	3
Israel	621,590	7	-------	-	583,945	7	13,320	-
Spain	532,852	8	-------	-	216,384	8	258,839	-
China	300,000 1/	9	84,600 1/	-	-------	-	375,700 1/	-
Congo	283,100 1/	10	1,300 1/	-	-------	-	3,500 1/	-
Italy	130,551	-	209,796	-	25,622	9	266,297	-
Poland	-------	-	1,163,402	2	-------	-	1,285,225	4
Japan	-------	-	536,800	4	-------	-	599,600	7
Czechoslovakia	-------	-	590,000 1/	3	-------	-	585,100 1/	8
United Kingdom	-------	-	495,100 1/	5	-------	-	435,100 1/	10
Brazil	-------	-	456,412	6	-------	-	456,232	9
Belgium	-------	-	318,604	8	-------	-	187,900	-
Hungary	-------	-	345,800 1/	7	-------	-	328,620	-
India	-------	-	316,302	9	-------	-	332,000	-
Netherlands	3,587	-	230,834	10	3,660	10	126,499	-
World Total	20,197,914		10,864,661		11,241,316		18,750,488	

1/ Unofficial figures.

Source: Annual Fertilizer Review 1973, Food and Agriculture Organization of The United Nations.

India, an AID participant, ranked third as an importer, ninth as a producer, and fourth as a consumer. Indonesia, the only other AID participant in the top ten, ranked number seven as an importer. One-half of the top ten importers were developing countries. Japan, the Netherlands, Belgium, Norway, and Romania each exported more N than was used at home.

Phosphate (P_2O_5) - The United States continued in 1972-73 as the leading producer, consumer, and exporter of P_2O_5, (excluding phosphate rock) (table 11). It produced 28 percent and consumed 20 percent of the world's fertilizer P_2O_5. Four of the top ten importers are developing countries. India, the only AID participant in the top ten, ranked fourth as an importer and tenth as a consumer. Belgium, the Netherlands, Tunisia, and Morocco exported more P_2O_5 than was used at home.

Potash (K_2O) - The United States ranked fifth as a producer and exporter, but first as a consumer and as an importer of K_2O in 1972-73 (table 12). The U.S.S.R., however, continued as the leading producer and ranks second as a consumer and third as an exporter.

Eleven countries are currently the world's significant sources of K_2O for fertilizers. Of the eleven countries, Canada appears to export more than 99 percent of its production. Israel exports about 94 percent, while East Germany exports nearly 75 percent of its production. West Germany and France export about one-half, while Spain, the United States, and the U.S.S.R. each export from one-third to two-fifths of their production.

Of the major producers, Canada, West Germany, East Germany, and Israel exported more K_2O than was used at home. Poland, Czechoslovakia, Japan, the United Kingdom, Brazil, Hungary, Belgium, India, and the Netherlands, in order, are the top ten importers after the United States. The first five of these are among the top ten users of K_2O.

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